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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,357	06/03/2005	Yoshiomi Kondoh	081909-0124	2650
22428 7590 07/08/2010 FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007				
EXAMINER				
BERDICHEVSKY, MIRIAM				
ART UNIT		PAPER NUMBER		
1795				
MAIL DATE		DELIVERY MODE		
07/08/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/537,357

Applicant(s)

KONDOH, YOSHIOMI

Examiner

MIRIAM BERDICHEVSKY

Art Unit

1795

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on rice 5/6/2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/CD)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Remarks

Terminal Disclaimer

1. The terminal disclaimer does not comply with 37 CFR 1.321(b) and/or (c)

because:

It does not include a recitation that any patent granted shall be enforceable only for and during such period that said patent is commonly owned with the application(s) or patent(s) which formed the basis for the double patenting rejection. See 37 CFR 1.321(c)(3).

2. An attorney or agent, not of record, is not authorized to sign a terminal disclaimer in the capacity as an attorney or agent acting in a representative capacity as provided by 37 CFR 1.34 (a). See 37 CFR 1.321(b) and/or (c).

Claim 1 has been amended. Claim 1 is currently pending.

Status

3. The objection from the previous office action has been withdrawn in view of Applicant's amendments.
4. The rejection under 35 U.S.C. 112 has been withdrawn in view of Applicant's amendments.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bijvoets (US 5006178) and Kessler (US 5515683).

As to claim 1, Bijvoets teaches a thermoelectric device electrically connected in series and thermally connected in parallel for the purpose of cooling (col. 1, lines 5-10 and 20-25). Bijvoets teaches a plurality of thermoelectric transducers (figure 1, pairs of 8 and 10), each of which includes a first conductive member (8s) and a second conductive member (10s) each having different Seebeck coefficients (p, n types) and a joining member joining the first and second conductive members by longitudinal ends (5s), a first coupling member (9 between 8s) connecting a first longitudinal end of the first conductive member of one of the transducers electrically and serially to a first longitudinal end of a first conductive member of another transducer (figure 1) and a second coupling member similarly connecting the second conductive members of two transducers (9 between 10s), as the electricity flows through the string from left to right the electricity flows serially through the coupling members (col. 3, lines 1-5). Bijvoets teaches that the coupling member/intermediate member lengthens the distance between the conductive members/semiconductors at a chosen length hardly generates

joule heat (col. 1, line 30 to col. 2, line 5 and col. 6, lines 25-30). Moreover, Bijvoets teaches that the thermoelectric device is connected thermally in parallel such that one side is hot and the other cold to create a difference in temperature across the device (col. 2, lines 55-60 and col. 5, lines 10-15). The Examiner notes that thermoelectric devices require such a thermal gradient to operate.

Bijvoets is silent to the application of a direct current power supply serially to one of the coupling members. However, the Examiner notes that one would appreciate that in order for the thermoelectric device to operate in a cooling mode, power must be applied to the device.

Kessler depicts the power supply connection to a thermoelectric device which maybe be used for either heating or cooling by applying power to the device in series (col. 2, lines 60-68; figures 1-2). Kessler supports Bijvoets by teaching that good cooling and heating can be achieved through well designed spatial arrangements and materials (col. 2, lines 65-68). The Examiner notes that as the components of Bijvoets are connected in series once power is applied the power is also connected serially and reads on the instant limitation. It would have been obvious to one of ordinary skill in the art at the time of the invention to apply a direct power supply to serially connected device of Bijvoets in order to activate the device in cooling or heating mode especially in light of the fact that applying power to the device of Bijvoets would provide a reasonable expectation of success.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Response to Arguments

8. Applicant's arguments filed 4/8/2010 have been fully considered but they are not persuasive. Applicant argues that the Bijvoets device is not a thermoelectric device. The Examiner notes that Bijvoets is directed to a thermoelectric device (title and col. 1, lines 5-15). Applicant argues that Bijvoets seems to incorrectly try to demonstrate advantages of Bijvoets' device when according to Applicant the device of Bijvoets would not function as intended. Applicant argues that unless the coupling pieces (9) in Bijvoets were superconductors the physical phenomenon Bijvoets claims is impossible, such that one of ordinary skill in the art would not look to Bijvoets. The Examiner respectfully disagrees. Figure 2 of the instant claimed invention closely resembles that of Bijvoets where D, A, B, 24 of instant figure 2 are seen as 5, 8, 10 and 9 of Bijvoets. Infact, figure 7 of the instant invention comprises a joining member (d), first and second

conductive members (a, b) and a coupling member 24. The instant specification discloses that the coupling member 24 may be copper. This again is the same material and structural layout as that seen in Bijvoets (col. 5, line 21). As there is no structural difference between the instant invention and the reference the two devices behave similarly. Should Applicant be arguing that the coupling member must be a superconductor, this argument is not commensurate with the scope of the claims and is moot. Attacking the references' science does not change the fact that the structure of Bijvoets reads on that of the claimed invention and therefore teaches the limitations of the claimed invention. The Examiner advises differentiating the claimed invention from that of Bijvoets by adding limitations which enable the instant invention to function in contrast to that of Bijvoets, which Applicant contends does not function. Finally, Kessler is merely relied upon as a teaching that it is well known to supply a direct current to thermoelectric devices for use in applications.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **MIRIAM BERDICHEVSKY** whose telephone number is (571)270-5256. The examiner can normally be reached on M-Th, 10am-8pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on (571) 272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. B./
Examiner, Art Unit 1795

/Alexa D. Neckel/
Supervisory Patent Examiner, Art Unit 1795